

WHAT IS CLAIMED IS

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1. A method of compensating waveform
degradation on a transmission signal by using a
plurality of compensation circuits, comprising the
10 steps of:

a) providing at least one of code error
information and code error correction information on
the transmission signal for which the compensation
has been performed by the plurality of compensation
15 circuits, to respective ones of the plurality of
compensation circuits; and

b) controlling each of the plurality of
compensation circuits individually based on the
thus-provided at least one of the code error
20 information and code error correction information so
as to compensate the waveform degradation on the
transmission signal.

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2. The method as claimed in claim 1,
wherein said plurality of compensation circuits
performs at least two of output power control, chirp
30 parameter control, transmission-end variable
dispersion compensation control, polarization
dispersion compensation control, reception-end
variable dispersion compensation control, reception-
end identification level control and identification
35 phase control.

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3. The method as claimed in claim 1,
wherein said step a) comprises the step of selecting
one of the plurality of compensation circuits one by
one, and providing to the thus-selected one at least
5 one of the code error information and code error
correction information on the transmission signal
for which the compensation control has been
performed by the plurality of compensation circuits.

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4. The method as claimed in claim 3,
wherein said step a) stops provision of the at least
15 one of the code error information and code error
correction information when substantially no more
code error or code error correction occurs.

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5. The method as claimed in claim 3,
wherein said step a) continues operation of
providing the at least one of the code error
25 information and code error correction information
until the difference between a current set value and
a preceding set value controlling the compensation
circuit becomes smaller than a predetermined target
value.

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6. The method as claimed in claim 3,
35 wherein said step a) starts provision of the at
least one of the code error information and code
error correction information when at least one of

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code error rate or code error correction rate on the transmission signal exceeds a predetermined threshold.

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10 7. The method as claimed in claim 1,
wherein said plurality of compensation circuits
comprises those provided in both a transmission end
and a reception end of transmission of the
transmission signal.

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20 8. A transmission characteristic
compensation apparatus which compensates waveform
degradation on a transmission signal by using a
plurality of compensation circuits, comprising:
 a first part providing at least one of
code error information and code error correction
information on the transmission signal for which the
25 compensation has been performed by the plurality of
compensation circuits, to respective ones of the
plurality of compensation circuits; and
 a second part controlling each of the
plurality of compensation circuits individually
30 based on the thus-provided at least one of the code
error information and code error correction
information so as to compensate the waveform
degradation on the transmission signal.

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9. A transmission characteristic compensation system for compensating waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising:

- 5 a first part providing at least one of code error information and code error correction information on the transmission signal for which the compensation has been performed by the plurality of compensation circuits, to respective ones of the
- 10 plurality of compensation circuits; and
- a second part controlling each of the compensation circuits individually based on the thus-provided at least one of the code error information and code error correction information so
- 15 as to compensate the waveform degradation on the transmission signal.

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